

Application No. 09/877,923

REMARKS

Claims 1-5 and 7-26 are pending. Claim 1 has been amended to correct a typographical error in which a comma was inadvertently left out. The Applicants do not intend to narrow the claim by this grammatical correction. All of the pending claims stand rejected. Applicants respectfully request reconsideration of the rejections based on the following remarks.

Claim Objections

Claims 11 and 19 were objected to under 37 CFR 1.75(c). The Examiner stated that the claims merely recite a method of forming the device. In response to Applicants' arguments that the recited methodology does impart identifiable structure, the Examiner asserted that the structure recited by the method needed to be explicitly placed in the claim. Applicants incorporate by reference their comments from the Amendment of August 22, 2003.

With all due respect, Applicants maintain that the Examiner's position is not consistent with accepted practice. Product-by-process claims are well acknowledged. See, for example, MPEP 2113. While patentability is determined in view of the resulting product, the process limitations can indeed limit the claims. See, for example, the first sentence of section 2113 as well as MPEP 2173.05(p). A large body of case law supports the proposition that process limitations can limit article claims. As stated in the first sentence of the second paragraph of Section 2113, "the structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product."

Applicants maintain that claims 11 and 19 are further limited from the corresponding independent claims. Some of the structural features implied by the process language of the claims are described in the previous Amendment. Applicants respectfully

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request support from the Examiner in terms of case law to support the position if the Examiner maintains this objection. Since the process language does specify features of the claimed article, Applicants respectfully request the withdrawal of the objections under 37 CFR 1.75(c).

Claim Rejections Under 35 U.S.C § 112

Claims 1-13, 22, and 24 are rejected under 35 U.S.C. § 112. The Examiner stated that Applicant's use of the term "optional" referring to the intermediate layer and the antireflective layer renders the claim indefinite as to whether the invention requires these layers to be included in the device. Applicants respectfully request reconsideration of the rejection based on the following comments.

The MPEP makes it clear that the term "optional" is an acceptable claim term. See, for example, MPEP 2173.05(h)III. This section of the MPEP indicates that the language "containing A, B and optionally C" was clear according to Ex parte Cordova. Similar language is presently at issue.

The Examiner states that Applicants use of the term "optional" makes it unclear whether or not the invention requires an intermediate layer. However, the term optional makes is completely clear that the intermediate layer is **not required** since it is **optional**. Applicants maintain that the claim is completely clear. The corresponding dependent claims make it clear whether or not the intermediate layer is present before further specifying any features of this layer.

Applicants use the term "optional" in claim 1 to state that the layer sequence (3) has a thickness of a whole number multiple of $\lambda/2$, regardless of whether or not the layer sequence comprises an intermediate layer. The intermediate layer is clearly not required as part of the layer sequence. It is included in the claim merely to show that a layer sequence, regardless of whether or not it includes the optional intermediate layer, has a thickness of a whole number multiple of $\lambda/2$. It is clear by the use of the term optional that the intermediate layer is not required.

The MPEP clearly supports the appropriateness of Applicants' claim language. The Examiner has not presented any real ambiguity with respect to the claim language. In

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particular, the Examiner has not indicated what possible interpretation of the claim language would lead to the conclusion that the optional intermediate layer is required. Applicants maintain that the claims are clear. Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 112.

Rejection Under 35 U.S.C. § 102(e)

The Examiner rejected claims 1-5, 7, 9-26 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,393,035 to Weingarten et al. (the Weingarten patent). In response to factual arguments presented by Applicants in the Response of August 22, 2003, the Examiner indicated that the arguments were not convincing. However, with all due respect, the Examiner has made a legal error with respect to the showing required in the present situation. Thus, the Examiner has failed to present a prima facie factual showing of anticipation. Applicants incorporate by reference the presentation in the Amendment of August 22, 2003 to avoid repeating all of the factual analysis. Applicants respectfully request reconsideration of the rejection based on the following comments.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (MPEP §2131). "For a prior art reference to anticipate in terms of 35 U.S.C. § 102, **every element of the claimed invention must be identically shown in a single reference.** These elements must be arranged as in the claim under review, but this is not an 'ipsissimis verbis' test." In re Bond, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990) (Internal citations omitted and emphasis added.).

"If the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if that element is 'inherent' in its disclosure. To establish inherency, the intrinsic evidence 'must make it clear that the missing descriptive matter

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is **necessarily present** in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. **Inherency, however, may not be established by probabilities or possibilities.** The mere fact that a certain thing may result from a given set of circumstances is not sufficient." In re Robertson, 49 USPQ2d 1949, 1950, 1951 (Fed. Cir. 1999), citing Continental Can Co. v. Monsanto Co., 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). See also MPEP 2112.

The Weingarten patent does not explicitly disclose strained quantum wells, as disclosed and claimed by Applicants. Therefore, the only way that the Weingarten patent can possibly anticipate Applicants' claimed invention is by inherency. But the Examiner has not provided a basis to support the proposition that the quantum well in the Weingarten patent is **necessarily** strained. According to MPEP 2112 (emphasis in original, citing Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990), "In relying on a theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flows from the teachings of the applied prior art."

Under the present facts, since the Examiner has not established a basis to conclude that the Weingarten patent necessarily, i.e., inherently, teaches a strained quantum well, the Examiner has failed to establish prima facie anticipation. Applicants do not have a burden to establish that the Weingarten quantum well cannot be strained.

However, Applicants do note that the Shieh et al. article (cited by the Examiner) discloses that their layer is "metastable." See, the top of the second column of page 1227. This implies that the layer is not at thermal equilibrium as a result of the particular way that they form their layer. The metastable nature of their layer inhibits the dislocations that generally would relieve the strain in a layer exceeding the Mathew-Blakeslee critical thickness. Thus, the Shieh et al. article does not support the general break down of the Mathew-Blakeslee model under normal equilibrium circumstances. The Weingarten patent does not teach metastable layers.

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While Applicants do not have the burden of making such a showing, Applicants maintain that the Weingarten patent seems to necessarily disclose a quantum well layer that is unstrained as would be understood by a person of ordinary skill in the art.

Since Applicants' claimed invention is not prima facie anticipated by the Weingarten patent, Applicants respectfully request withdrawal of the rejection of claims 1-5, 7, 9-26 under 35 U.S.C. § 102(e) as being anticipated by the Weingarten patent.

CONCLUSIONS

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



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